BONNEVILLE POWER ADMINISTRATION

Garfield County Habitat for Fall Chinook and Steelhead

Annual Report 2006 January 2007 DOE/BP-00026584-1

This Document should be cited as follows:

Bartels, Duane, "Garfield County Habitat for Fall Chinook and Steelhead", 2006 Annual Report, Project No. 199401807, 13 electronic pages, (BPA Report DOE/BP-00026584-1)

Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208

This report was funded by the Bonneville Power Administration (BPA), U.S. Department of Energy, as part of BPA's program to protect, mitigate, and enhance fish and wildlife affected by the development and operation of hydroelectric facilities on the Columbia River and its tributaries. The views in this report are the author's and do not necessarily represent the views of BPA.

Habitat for Fall Chinook and Steelhead

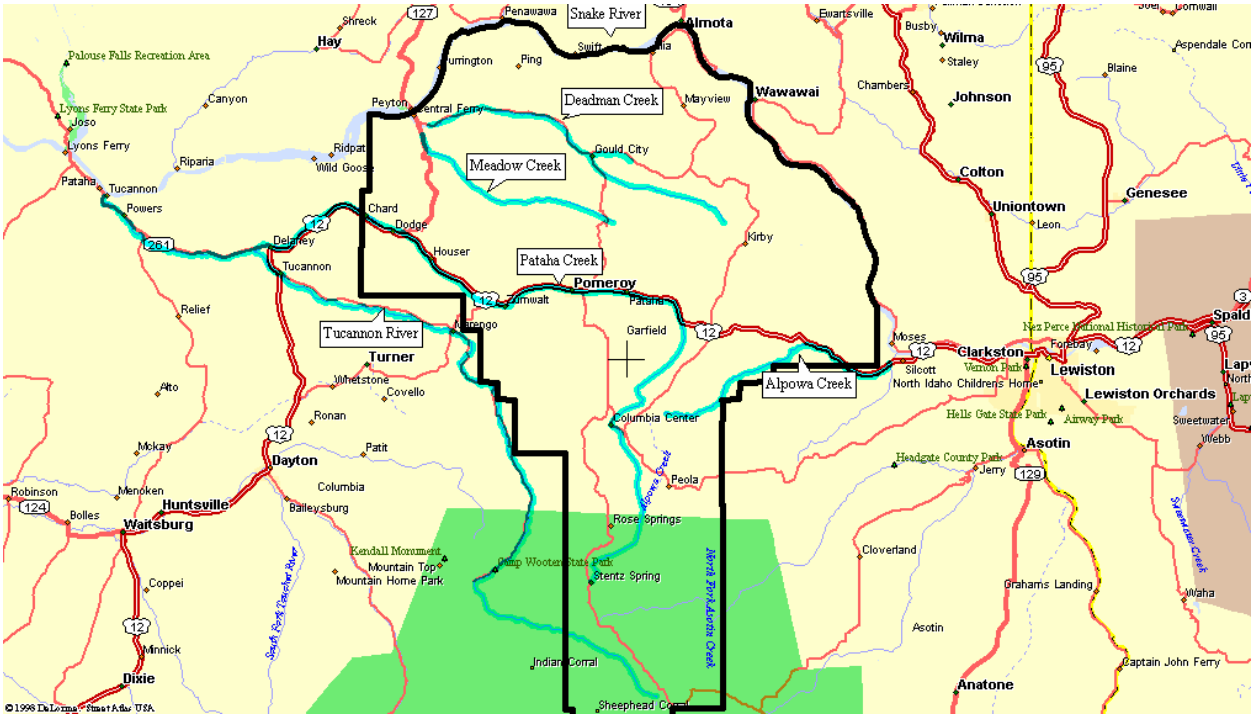
January 2006 – December 2006 Habitat Conservation Projects Completed

Cooperators:
Bonneville Power Administration
Washington State Conservation Commission
Washington State Department of Fish and Wildlife
Natural Resources Conservation Service
Umatilla National Forest, Pomeroy Ranger District
Farmers and Ranchers of Garfield County

Annual Report for Parent Project 1994-018-07, Contract #26584

Duane G. Bartels, District Manager
Pomeroy Conservation District
804 Main P.O. Box 468
Pomeroy, WA 99347
E-mail- pcdistrict@qwest.net

January 2007



Garfield County in SE Washington

Table of Contents

Abstract

The objectives and tasks outlined in detail in this project report were implemented during calendar year 2006 in all the watersheds of Garfield County. The Pataha Creek Watershed was selected in 1993, along with the Tucannon and Asotin Creeks, as model watersheds by the Northwest Power and Conservation Council (NPCC). In the years since 1993, other watersheds in Garfield County have been designated as salmon bearing streams and have received numerous practices formerly just designated for the Pataha Creek Watershed. The following sections show the individual practices, quantity of practices implemented, total costs, BPA costs and tons of soil saved for all the BPA funds used to protect and enhance the natural resources in the salmon bearing watersheds of Garfield County.

In the year 2006, 55 % of the funding received from BPA went into cost share practices. Of all the cost share received in the county, 22% came from BPA. This is largely due to other funding programs becoming available to address livestock influenced water quality problems and riparian health improvement.

Over 95% of the sediment entering the streams can be tied directly to the upland and riparian areas of the watershed.

The Pataha Creek, Deadman Creek, and Alpowa Creek have had steelhead runs in the past. The Pataha Creek has native and planted rainbow trout in the mid to upper portion. Suckers, pikeminow, and shiners inhabit the lower portion of Pataha Creek because of the higher water temperatures and lack of vegetation. The improvement of riparian habitat through the CREP, CCRP, and DOE grants has improved habitat for all the fish species. The lower portion of the Pataha Creek is slowly developing into spawning and rearing habitat for Chinook salmon. With the future removal of some migration barriers on the lower portion of the Deadman and Pataha, more stream miles will become useful spawning and rearing habitat.

The upland projects completed during 2006 were practices that significantly reduce the erosion and resulting sedimentation from these croplands. Runoff studies conducted by WSU have shown a direct impact on reducing soil erosion by the implementation of these practices.

The tree planting projects conducted under the CREP (Conservation Reserve Enhancement Program) and CRP (Continuous Conservation Reserve Program) programs have helped reduce sedimentation and have also improved the riparian zone in desired locations inside the Pataha, Deadman, and Alpowa Creek watersheds. The CREP and the CCRP programs continue with enrollment in the watersheds and are protecting the riparian areas along these three streams at an increasing level every year. Currently, over 1,100 acres of riparian habitat have been enrolled in the CREP program within these three watersheds.

Introduction

Due to the high value of the fish resource in the Tucannon River, there have been many studies and planning efforts directed at restoring resource conditions in this watershed. Pataha Creek, the largest sub-watershed in the Tucannon watershed, has been identified as one of the primary contributors of sediment to the Tucannon River. Alpowa Creek has a good run of steelhead but has suffered from riparian degradation and embeddedness. Deadman Creek has steelhead but lack of riparian vegetation and embeddedness from sedimentation has reduced its production capability.

The effects of fine sediment and organic matter on salmonid reproduction have been studied intensively for more than three decades, both on site and in the laboratory. General information from these studies has shown that sands, silts, clays and organic matter that are deposited in gravel spawning beds – referred to as redds – adversely affect the survival to emergence of salmonid populations. Clogging of gravel beds by fine sediments and organic matter reduces the availability of dissolved oxygen needed by salmonid embryos and fry. Fine sediments that are deposited in gravel beds also restrict the removal of metabolic wastes produced by incubating salmonid eggs. Moreover, fine sediments that clog the interstices of gravel spawning beds entrap the fry within the gravel as they try to emerge.

This project was proposed to the Northwest Power and Conservation Council in 1993 to help address some of these problems through the model watershed process.

BPA Budget Summary

BPA funding under contract 26584 was used for cost sharing of BMP's, salaries and benefits for the coordinator and administrative assistant, travel expenses, and goods and services needed for the administration of the cost-sharing program for the calendar year 2006.

The following summary reflects this calendar year of expenses:

Table 1: Budget Summary

Salaries & Benefits		
Coordinator	$18,558	
Clerical	$8,821	
Total		$27,379
Cost Share		
Direct Seed	$14,263	
No-till Seeding	$27,079	
Pasture Hayland planting	$2,587	
Total		$43,931
Goods and Services		
Cell phone	$333	
Computer GIS	$458	
Copier	$2,846	
Information/edu	$413	
Internet Service	$180	

Project monitoring	$1,025	
Office Supplies	$185	
Postage	$506	
Storage	$660	
Support of Project	$124	
Vehicle fuel, maint. For monitor	$292	
Water Quality tests (in house)	$520	
Weather Station update/oper	$1,230	
Total		$8,771
Total cost of CS program to BPA		$80,081

Table 2: Other Projects and Funding

Program or Organization	Projects	Total Costs	Funding	Landowner/ other match
DOE	Riparian restoration	$54,560	$40,920	$13,640
CREP	Riparian fencing, watering, planting	$23,912	$23,912	
Implementation	Upland BMP's	$32,372	$16,186	$16,186
LIWQ	Livestock Influenced Water Quality	$175,396	$79,913	$95,483
	Totals	**$286,240**	**$160,933**	**$125,309**

Project Summaries

Watershed Project Coordination and Administration for 2006; Contract #26584

The Pomeroy Conservation District was provided funding from the BPA to continue the administration and implementation of approved conservation practices in Garfield County. It follows the intent of the Pataha Creek Model Watershed plan developed in 1993. This plan was a pilot effort to encourage private landowners to join government agencies in finding solutions to loss of salmon habitat and critical riparian areas. The goal of the plan is to set into motion efforts to return the upper Pataha Creek Watershed and lower Tucannon River to productive capacity for salmon spawning and rearing.

The Pataha Creek's past high delivery of sediment and high water temperatures into the spawning and rearing area of the lower Tucannon River was determined to be the main problem in the Pataha Creek Watershed.

Since 1993, the watershed coordinator has worked to bring together the technical experts of state and federal agencies with private landowners to jointly find solutions to habitat problems within the watershed and now throughout Garfield County. The technical representatives provide the scientific background and information on critical needs of the fish while the landowners provide the common sense backstop to ensure that the action items suggested by the agencies are attainable, physically and financially within the watershed.

The Pomeroy Conservation District has worked with the Washington State Conservation Commission, Bonneville Power Administration, and the Natural Resources Conservation Service

since the beginning of this pilot program. We have jointly implemented conservation practices to help reduce the erosion and resulting sedimentation moving from our uplands into all the streams of Garfield County. We have also installed practices within the riparian area to improve bank stability, riparian vegetation, and in-stream fish habitat.

The Pomeroy Conservation District was involved in the subbasin planning process for the Tucannon Subbasin and was the lead for the Lower Snake Subbasin. This process took over a year with funding provided by the NPCC and consisted of many meetings of technical and citizen representatives, WDFW data collection and the writing of the plan by consulting firms. These two plans were delivered to the NPCC on May 28, 2004.

The following sections illustrate the projects implemented under contract 17137 and the Washington State Conservation Commission Implementation grant. Tons of soil saved is calculated using the RUSLE2 (Revised Universal Soil Loss Equation) and is the amount of soil saved using the practice compared to a conventional method of seed production using cultivation with no conservation practices involved in the crop production program. The RUSLE2 formula used to make this calculation uses several factors to determine a yearly soil loss. The formala is a = rklscp. The following factors are: r = rainfall/runoff k = soil erodibility l = slope length s = slope steepness c = cover management p = supporting practices. A detailed explanation of this soil program is available on the internet.

2006 Cost Share practices; Contract #26584

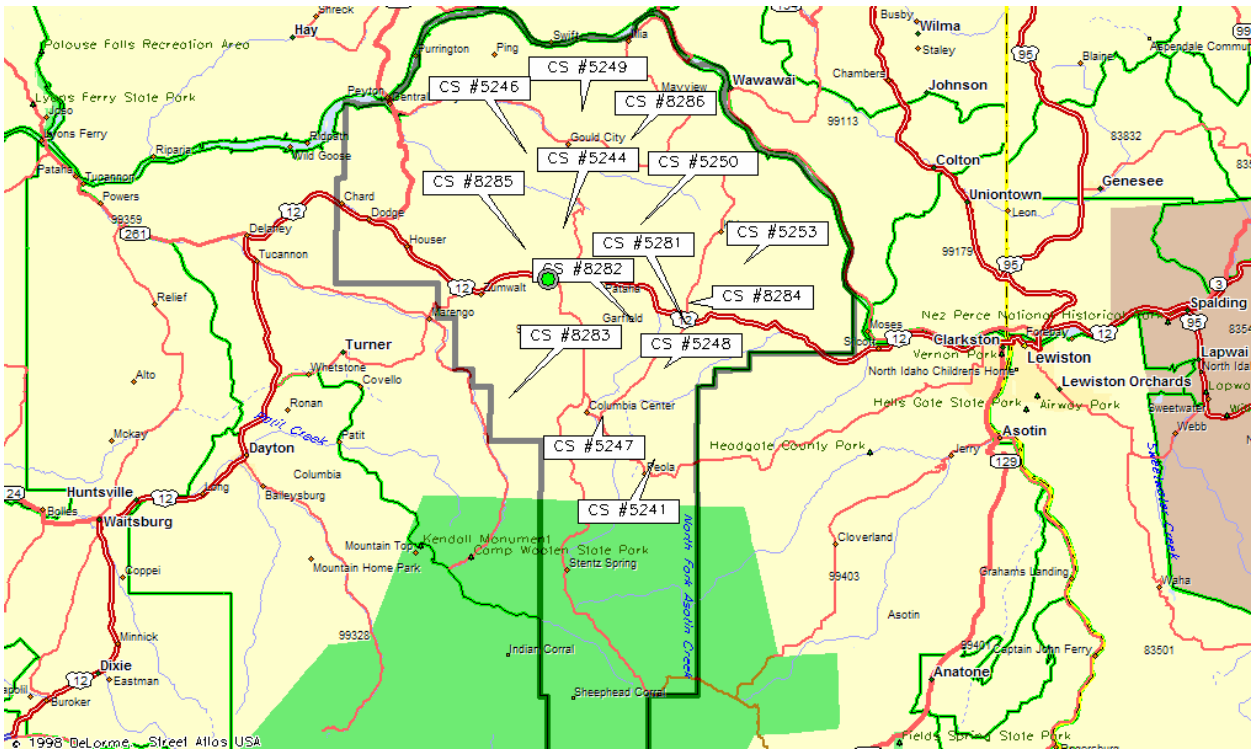


Figure 1: Sites where cost share practices were implemented in Garfield County during 2006.

Table 3: Conservation Practice cost shares

CS #	Operator	Practice	BPA CS	Operator CS	Acres
5241	Steve Flerchinger	Pasture Planting	$2,588	$2,588	84 ac.
5244	Mike Hastings	No-till	$1,020	$1,020	68 ac.
5246	Pat Dixon	No-till	$2,675	$2,675	178 ac.
5247	Sam Dixon	No-till	$1,666	$1,666	111 ac.
5248	Marcus Flerchinger	No-till	$5,000	$5,000	333+ ac.
5249	R& G Ranches	Direct Seed	$5,000	$5,000	333+ ac.
5250	WP Farms	No-till	$5,000	$5,000	333+ ac.
5251	Gilbert Farms	No-till	$1,164	$1,164	78 ac.
5253	Dale Heitstuman	No-till	$2,667	$2,667	178 ac.
8282	Kurt Landkammer	No-till	$3,279	$3,279	219 ac.
8283	Niebel Farms	Direct Seed	$3,881	$3,881	259 ac.
8284	Dick Ledgerwood	No-till	$4,611	$4,611	307 ac.
8285	Tetrick Inc.	Direct Seed	$3,105	$3,105	207 ac.
8286	Blachly and Sons	Direct Seed	$2,277	$2,277	152 ac.
	Total Cost share		$43,933		

Farmers who elected no-till or Direct seeding were eligible for cost-sharing at $15 per acre. Three years ago, the board of supervisors implemented a policy that if a producer receives 3 payments ($5,000 limit per payment), that they could no longer receive cost share for no-till. The board felt that the funding should be used to introduce the producers to the practice and that three years would be long enough for the producer to decide if he wanted to use the no-till practice in his farming operation. This policy spread the limited funding under this contract among more farmers and reduced the amount that one operator could continue to receive.

Figure 2 John Deere no-till drill

This drill (Figure 2) and others similar to this are used to no-till and direct seed grain crops into soil that has remained undisturbed since the last crop. The drills are capable of preparing a seed bed, placing fertilizer, and seeding in one operation. Direct seed uses a separate implement to place the fertilizer but with very little soil disturbance. The advantage of this seeding system is the overall reduction in soil erosion and the improvement of soil health. As the roots from past years' crops decompose undisturbed, they release nutrients and leave pockets of air for moisture to enter. When soil is not cultivated as it has been in the past, a much lower amount of carbon dioxide is released into the atmosphere. The soil is not left exposed to the elements and will not erode from the crop fields into nearby streams. No-till or direct seeding in conjunction with annual cropping and crop rotations is one of the very best ways to reduce upland erosion and the resulting sedimentation into our fish bearing streams.

2006 Cost Share practices from other programs

Table 4: Other conservation practices and water quality improvement practices

CS #	Operator	Practice		Funding Source	Cost Share	Match
5242	Dick Ledgerwood & Sons	Cross fencing	1 mile	*Implementation	$2,069	$2,069
5252	Wayne Fitzsimmons	Direct Seeding	333+ ac.	*Implementation	$5,000	$5,000
5254	Bill Leonard	Direct Seeding	273 ac.	*Implementation	$4,095	$4,095
8287	Don Richardson	No-till	322 ac.	*Implementation	$4,829	$4,829
8261	Julie Love	Windbreak	100 ft.	*Implementation	$194	$194
06-47-LVCS-01	Slaybaugh Bros.	Feedlot		*LIWQ	$25,000	$54,878
06-47-LVCS-02	GW Farms	Heavy Use		*LIWQ	$1,274	$425
06-47-LVCS-03	McGreevy Bros.	Feedlot		*LIWQ	$25,000	$44,921
06-47-LVCS-04	Dick Ledgerwood & Sons	Feedlot		*LIWQ	$15,772	$36,916
06-47-LVCS-05	Baker Shelton	Corral		*LIWQ	$4,768	$1,589
06-47-LVCS-06	Herres Land Company	Water facility		*LIWQ	$4,883	$12,506

*Implementation – Conservation Commission
*LIWQ – Conservation Commission Livestock Influenced Water Quality

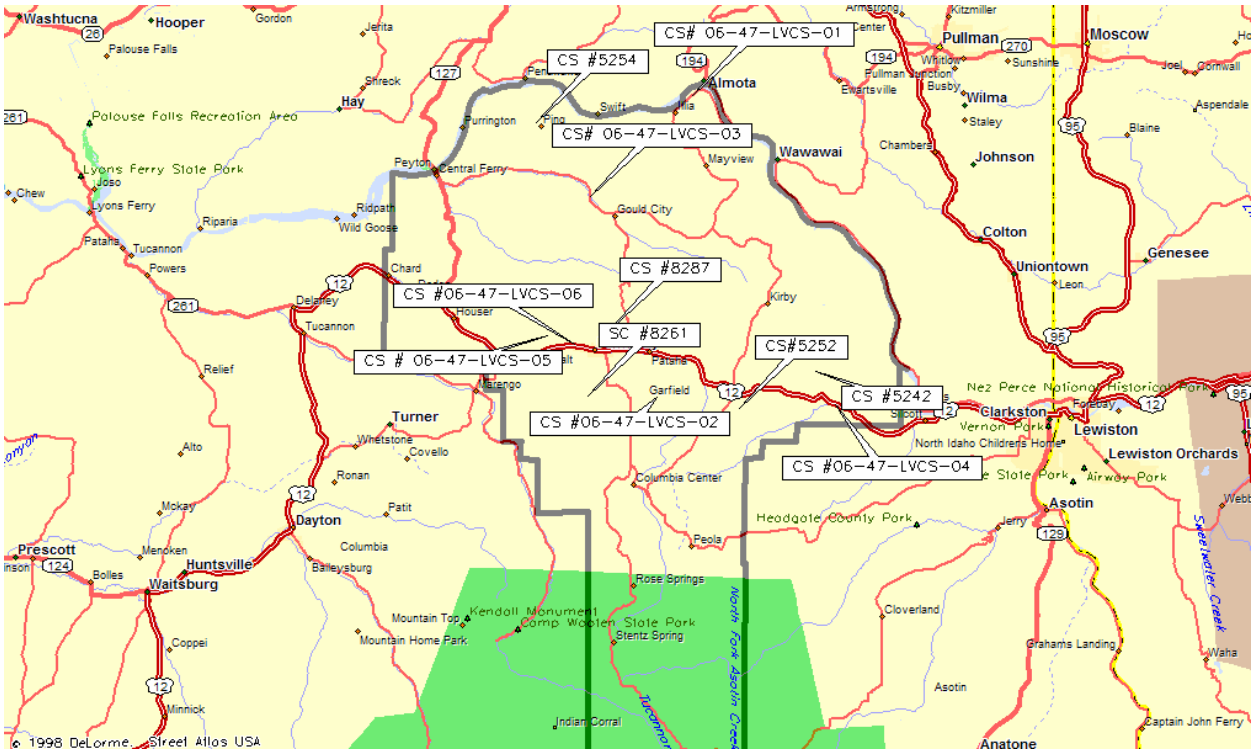


Figure 3: Sites where cost share practices from other (non-BPA) programs were implemented in Garfield County during 2006.

Water Quality Monitoring in Pataha Creek Watershed; Contract 26584 supporting a WDOE grant

WSU has conducted the water quality-monitoring program in the Pataha Creek Watershed, Deadman Creek Watershed, and Alpowa Creek Watershed and is again funded under a current Washington Department of Ecology grant received by the district in 2004. They collect temperature (°C), sediment (Total Suspended Solids –TSS), fecal coliform (cfu/100mL), flow (cfs), ammonia (ppm), nitrate (ppm), total Kjeldahl nitrogen (TKN –ppm), and total phosphorus (ppm) data from 11 sites in the Pataha subbasin. Quarterly reports are available from Feb thru Oct. 2004 and can be obtained at the district office in Pomeroy. A Watershed Scale Study on no-till farming systems for reducing sediment delivery conducted by WSU is also available at the district. These will be placed on the district web site when it goes on line in March 2006. A detailed explanation of monitoring protocols and methods was given in the April 2003 report covering all data collected, protocols, and procedures.

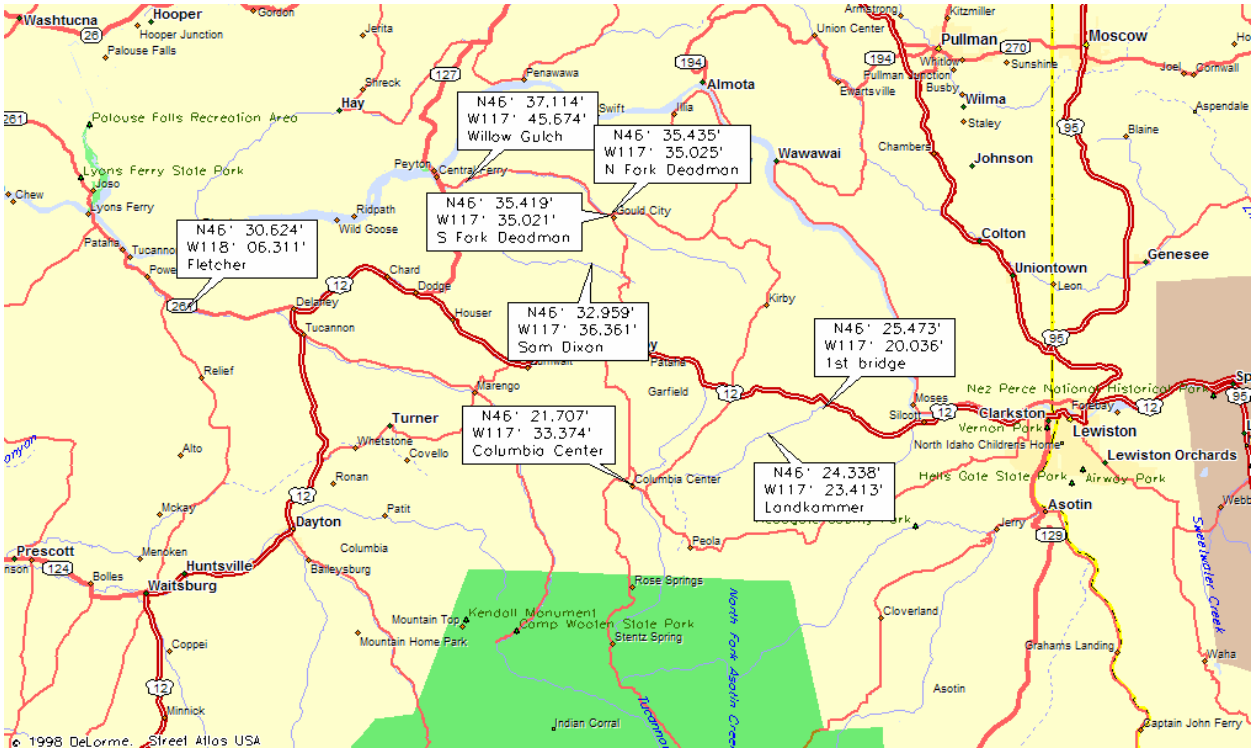


Figure 4: Water quality testing sites

Report Conclusion

This report describes the activities and associated costs within the Pataha Creek Watershed from January 2006 through December of 2006.

$80,000 was allocated to the Pomeroy CD from BPA for 2006. Other funding was provided through the Department of Ecology and the Washington State Conservation Commission to keep a voluntary program to implement BMP's on the ground. With sub-basin planning completed for the Lower Snake and Tucannon sub-basins, new activities are bringing the program back to par and we are continuing with the implementation of habitat restoration and sediment reduction practices.

The Pomeroy Conservation District would like to thank the Bonneville Power Administration for the funding they provided. The habitat in Garfield County is being improved and the Pomeroy CD will continue its efforts to enhance and restore habitat for the fish and wildlife within the watershed's boundaries.

References

The following lists the publications used in the preparation of the Pataha Creek Model Watershed Plan and also parts of this report.

Tucannon River Watershed Plan (USDA 1991): This plan was prepared under authority of PL-566 and recommends certain conservation practices that would lower water temperature and reduce the amount of sediment delivered to the stream. This plan provides federal cost-share funds to private landowners to help establish the recommended practices. In stream habitat improvement, however, was not included as part of the planning or funding of this project.

Southeast Washington Cooperative River Basin Study (USDA 1984): The objective of this study was to provide a basin-wide evaluation of existing land management and stream habitat conditions related to erosion and sediment problems.

Pataha Creek Water Quality Report 1998-2001: The objective of this study is to evaluate the water quality in the Pataha Creek watershed in an effort to determine the effectiveness of agricultural conservation practices in southeast Washington's Pomeroy Conservation district. Data presented were collected between March 1999 and July 2001, and then analyzed by Washington State University's Department of Biological Systems and by the Center for Environmental Education.